

REMARKS

This application pertains to a novel pressure-sensitive adhesive composition having an outgassing level of not more than 50 µg/g, and to a process for producing it.

Claims 1-3 and 5-13 are pending.

Claims 1, 2 and 9-11 stand rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Harder et al (DE 19807752, corresponding to US 6,432,529).

The Examiner contends that Harder discloses the same composition as that claimed by Applicants, and that the same material can not have different properties. The fact of the matter is, however, that different treatment of the same or similar compositions can, in fact, lead to different properties. Applicants' novel processing steps leads to lower outgassing than that disclosed by Harder.

In this regard, the Examiner's attention is respectfully drawn to Applicants' Example 1. The adhesive of Example 1 is equivalent to Harder's resin in that it is a conventional acResin, which also has ca. 0.3 mg volatiles if it were measured by the VW test. As can be seen in table 2, page 12 of the present specification, the resin of Example 1, when tested by the test method described at page 10, had an outgassing of 150 µg/g, which is far in excess of the limitation of Applicants' claim 1.

Of even greater importance, however, is the fact that when a resin of this type is crosslinked by conventional UV-C radiation, the resin sustains fragmentation, and the amount of volatiles increases. This can be seen by a comparison of the results for Example 1 to those of Examples 2 and 3 and by comparing the results of Example 4 to those of Example 5. Example 4 shows an outgassing level of 5 $\mu\text{g/g}$; but when this resin is irradiated by conventional UV-C radiation, the outgassing is increased to 61 $\mu\text{g/g}$.

By contrast, Applicants' resin (Example 6), when crosslinked by UV-A radiation, had an outgassing level of only 9 $\mu\text{g/g}$.

The prior art uses conventional UV-C radiation for crosslinking of resins of this type, and there is nothing in the prior art that would teach or suggest the advantages of crosslinking by UV-A radiation, or that a crosslinked (meth)acrylic pressure-sensitive adhesive could be prepared with an outgassing level below 50 $\mu\text{g/g}$ by any means.

Nothing in the prior art teaches or suggests any UV crosslinked (meth)acrylic pressure sensitive adhesives with an outgassing level this low.

Applicants' claims have now been limited to UV crosslinked pressure-sensitive adhesives having outgassing levels of less than 50 $\mu\text{g/g}$, and as such, the claims are neither anticipated nor suggested by the Harder reference.

The rejection of Claims 1, 2 and 9-11 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Harder et al (DE 19807752, corresponding to US 6,432,529) should accordingly now be withdrawn.

Claims 1-3, and 5-13 stand rejected under 35 U.S.C. 103(a) as obvious over Harder DE 19807752 (=US 6,432,529) in view of Harder DE 4313008 (=US 6,613,870). The Examiner views Harder '008 as teaching a method by which the adhesives of Harder '529 could be treated, presumably to reach the low outgassing level claimed by Applicants.

Neither Harder reference teaches or suggests anything at all about outgassing levels of crosslinked pressure-sensitive adhesives. As discussed above, the conventional technique of crosslinking with UV-C irradiation tends to cause fragmentation, which results in increased outgassing levels, as shown by Applicants' Examples.

In order to achieve the low outgassing levels in the crosslinked pressure-sensitive adhesive, two important steps are required: (1) a carrier distillation using an entrainer, which results in a reduced level of volatiles (as in Applicants' Example 4). If conventional UV-C is used to crosslink even this low-volatile containing resin, however, fragmentation will lead to higher volatiles (Example 5). Applicants' step (2) is a crosslinking process induced by UV-A radiation (Example 7, Philips sunlamp).

Surprisingly, on the one hand the efficiency of the crosslinking process is high enough to result in adhesives with the desired adhesion properties, and on the other hand there are almost no interfering fragmentation processes so that no volatiles are rebuilt. The combination of these two steps results in the novel adhesives claimed by Applicants.

Nothing in the references cited teaches or suggests this!

Accordingly, the rejection of Claims 1-3, and 5-13 under 35 U.S.C. 103(a) as obvious over Harder DE 19807752 (=US 6,432,529) in view of Harder DE 4313008 (=US 6,613,870) should now be withdrawn.

In view of the present amendments and remarks it is believed that claims 1-3 and 5-13 are now in condition for allowance. Reconsideration of said claims by the Examiner is respectfully requested and the allowance thereof is courteously solicited.

CONDITIONAL PETITION FOR EXTENSION OF TIME


If any extension of time for this response is required, applicant requests that this be considered a petition therefor. Please charge the required Petition fee to Deposit Account No. 14-1263.

ADDITIONAL FEE

Please charge any insufficiency of fees, or credit any excess to our Deposit Account No. 14-1263.

Respectfully submitted,

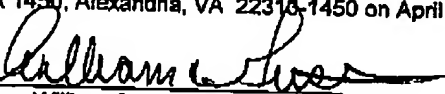
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